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| 09/635,636 | 08/10/2000 | Jun Oouchi | Q60126 | 5835 |

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EXAMINER

PEREZ GUTIERREZ, RAFAEL

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2686

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/635,636

Applicant(s)

Oouchi

Examiner

Rafael Perez-Gutierrez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 and 8 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office Action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 10, 2004 has been entered. **Claims 1-9** are still pending in the present application.

Claim Objections

2. **Claims 1, 2, and 4-9** are objected to because of the following informalities:

a) On **line 6** of **claims 1, 5, 7, and 8**, replace "the" with --a-- after "to" in order to provide proper antecedent basis to "normal reception sensitivity";

b) On **line 11** of **claim 2** and on **line 3** of **claim 4**, replace "the" with --a-- after "than" in order to provide proper antecedent basis to "normal judging level";

c) On **line 2** of **claim 4**, replace "the" with --a-- after "changes" in order to provide proper antecedent basis to "judging level";

d) On **lines 8-10** of **claim 5**, replace "further comprising" with --, wherein the DSRC car-mounted equipment further comprises-- after "equipment";

e) On **line 10** of **claim 5**, replace "the" with --a-- after "data of" in order to provide

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proper antecedent basis to “vehicle”;

f) On **line 18 of claim 5**, replace “the” with --a-- after “toward” in order to provide proper antecedent basis to “decreasing side”;

g) On **line 20 of claim 5**, replace “the” with --an-- after “toward” in order to provide proper antecedent basis to “increasing side”;

h) On **line 2 of claim 6** and on **lines 10 and 22 of claim 7**, replace “on-theroad” with --on-the-road--;

i) On **line 5 of claim 6**, on **line 12 of claim 7**, and on **line 15 of claim 8**, replace “the” with --a-- before “normal” in order to provide proper antecedent basis to “normal transmission output”;

j) On **line 21 of claim 7** and on **line 23 of claim 8**, replace “the” with --a-- before “normal” in order to provide proper antecedent basis to “normal amplification factor”; and

k) On **line 5 of claim 9**, replace “car mounted” with --car-mounted-- before “controller”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-4, 6, and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was

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not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Consider **claim 1**, the limitation of “wherein said normal reception sensitivity is not related to a deactivated state” introduces new matter and fails to comply with the written description requirement because the specification of the present application does not specify or disclose, either implicitly or explicitly, that the normal reception sensitivity is not related to a deactivated state. MPEP 2173.05(i) states that any negative limitation or exclusionary provision must have basis in the original disclosure and any claim containing a negative limitation which does not have basis in the original disclosure should be rejected under 35 U.S.C. 1 12, first paragraph. Since the written description of the present application does not set forth that the normal reception sensitivity is not related to a deactivated state, the new limitation added to claim 1 introduces a new matter. Applicant is welcomed to point out where in the specification the Examiner can find support for this limitation if Applicant believes otherwise.

For purposes of applying prior art, this new limitation is being read in accordance with Applicant’s specification (i.e., a prior art reference that returns the reception sensitivity back to a normal reception sensitivity but is silent in terms of the normal reception sensitivity being not related to a deactivated state anticipates the limitation).

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless -- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by **Inoue (U.S. Patent # 6,300,882 B1)**.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131, or by filing a certified translation of the foreign priority application.

Consider **claim 1**, Inoue clearly shows and discloses a DSRC car-mounted equipment for transmitting and receiving data with an on-the-road equipment (abstract and figure 1) comprising:

a reception sensitivity-increasing means (combination of control unit 20, sensitivity adjusting unit 30, received signal power detector 24, and variable gain amplifier 14A) (figure 1) for increasing the reception sensitivity in a communication area with an on-the-road equipment in response to the entrance into a communication start area with the on-the-road equipment

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(abstract, figures 1 and 2, column 5 line 54 - column 6 line 15, and column 7 lines 1-27); wherein

the reception sensitivity-increasing means (combination of control unit 20, sensitivity adjusting unit 30, received signal power detector 24, and variable gain amplifier 14A) (figure 1) returns the reception sensitivity back to the normal reception sensitivity of before entering into the communication start area in response to the end of communication with the on-the-road equipment, wherein said normal reception sensitivity is not related to a deactivated state (i.e., the sensitivity is related to type of vehicles and received field strength) (abstract, figures 1 and 2, column 5 line 54 - column 6 line 15, and column 7 lines 1-27).

Consider **claim 3**, and as **applied to claim 1** above, Inoue further shows and discloses that the reception sensitivity-increasing means (combination of control unit 20, sensitivity adjusting unit 30, received signal power detector 24, and variable gain amplifier 14A) (figure 1) further comprises:

a variable gain amplifier (reception amplifier) 14A for amplifying a signal received from the on-the-road equipment (figure 1 and column 9 lines 59-64);

a received signal power detector (electric field intensity detector) 24 for producing an electric field intensity judgement signal upon detecting the electric field intensity of a signal through the variable gain amplifier (reception amplifier) 14A (figure 1, column 9 lines 45-57, and column 10 lines 32-37); and

a reception control unit 20 for controlling the amplification factor of the variable gain amplifier (reception amplifier) 14A in response to the electric field intensity judgement signal (figure 1, column 7 lines 1-7, column 9 lines 59-64, column 10 lines 18-58, column 11 line 50 -

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column 12 line 14, column 13 lines 3-24, and column 14 lines 21-36); and wherein

the reception control unit 20 changes the amplification factor of the variable gain amplifier (reception amplifier) 14A into an amplification factor larger than the normal amplification factor in response to a first electric field intensity judgement signal corresponding to the entrance into the communication start area and fetches the reception data in the signals received in the communication area (figure 1, column 7 lines 1-7, column 9 lines 59-64, column 10 lines 18-58, column 11 line 50 - column 12 line 14, column 13 lines 3-24, and column 14 lines 21-36).

5. **Claims 1 and 6** are rejected under 35 U.S.C. 102(e) as being anticipated by **Inoue (U.S. Patent # 6,337,978 B1)**.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Consider **claim 1**, Inoue clearly shows and discloses a DSRC car-mounted equipment for transmitting and receiving data with an on-the-road equipment (abstract and figure 1) comprising:

a reception sensitivity-increasing means (combination of first power supply circuit 3,

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power supply starting means 5, RSSI detecting unit 11, communication area detecting means 12, and area end detecting means 15) (figure 1) for increasing the reception sensitivity in a communication area with an on-the-road equipment in response to the entrance into a communication start area with the on-the-road equipment (i.e., as determined by the strength of the received electric field) (abstract, figures 1 and 2, column 2 lines 37-57, and column 4 line 10 - column 5 line 59); wherein

the reception sensitivity-increasing means (combination of first power supply circuit 3, power supply starting means 5, RSSI detecting unit 11, communication area detecting means 12, and area end detecting means 15) (figure 1) returns the reception sensitivity back to the normal reception sensitivity of before entering into the communication start area in response to the end of communication with the on-the-road equipment (i.e., as determined by the strength of the received electric field), wherein said normal reception sensitivity is not related to a deactivated state (i.e., the device is still activated) (abstract, figures 1 and 2, column 2 lines 37-57, and column 4 line 10 - column 5 line 59).

Consider **claim 6**, and **as applied to claim 1 above**, Inoue further shows and discloses that the DSRC car-mounted equipment further comprises a transmission output-increasing means (combination of data transmission/reception circuit 2, first power supply circuit 3, RSSI detecting unit 11, communication area detecting means 12, and power supply starting means 5) for increasing the transmission output to the on-the-road equipment in a communication area in response to entrance into a communication start area (i.e., by supplying power to the data transmission /reception circuit 2) (abstract and column 5 lines 9-16), wherein the transmission

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output-increasing means (combination of data transmission/reception circuit 2, first power supply circuit 3, RSSI detecting unit 11, communication area detecting means 12, and power supply starting means 5) returns the transmission output back to the normal transmission output of before entering into the communication start area in response to the end of communication with the on-the-road equipment (i.e., by stopping supplying power to the data transmission/reception circuit 2) (column 5 lines 16-18).

6. **Claims 1, 2, 4, 5, and 9** are rejected under 35 U.S.C. 102(e) as being anticipated by **Takikita (U.S. Patent # 6,339,381 B1)**.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," by an appropriate showing under 37 CFR 1.131, or by filing a certified translation of the foreign priority application.

Consider **claim 1**, Takikita clearly shows and discloses a DSRC car-mounted equipment for transmitting and receiving data with an on-the-road equipment (figure 1) comprising:

a reception sensitivity-increasing means (microcomputer 10A and radio detector unit 12) (figure 1) for increasing the reception sensitivity in a communication area (i.e., by contracting or reducing the communication area) with an on-the-road equipment in response to the entrance

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into a communication start area with the on-the-road equipment (i.e., as determined by the intensity of the radio electric field) (abstract, figure 3, column 4 lines 31-67, column 6 lines 26-32 and lines 53-67, column 7 lines 35-41, column 8 lines 16-50, and column 9 lines 46-67);

wherein the reception sensitivity-increasing means (microcomputer 10A and radio detector unit 12) (figure 1) returns the reception sensitivity back to the normal reception sensitivity of before entering into the communication start area in response to the end of communication with the on-the-road equipment (i.e., as determined by the intensity of the radio electric field), wherein said normal reception sensitivity is not related to a deactivated state (i.e., the reception sensitivity is related to vehicle speed) (abstract, figure 3, column 4 lines 31-67, column 5 lines 1-27, column 6 lines 26-67, column 7 lines 35-46, column 8 line 16 - column 9 line 24, column 9 lines 46-67, and claims 1-5).

Consider **claim 2**, and **as applied to claim 1 above**, Takikita further show and disclose that the reception sensitivity-increasing means (microcomputer 10A and radio detector unit 12) (figure 1) further includes:

an electric field intensity detector 16 for detecting the electric field intensity of a signal received from the on-the-road equipment (figure 1, column 4 lines 42-44, column 6 lines 26-32, and column 7 lines 21-41);

communication area-setting means (comparator circuit) that compares the electric field intensity with a predetermined judging level (LE1, LE2) and outputs an electric field intensity judgement signal when the electric field intensity is not smaller than the judging level (column 4 lines 60-67 and column 6 lines 48-67); and

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a reception control unit (communication area-setting means and communication control unit 11) for variably setting the judging level in response to the electric field intensity judgement signal (column 7 lines 27-46 and column 9 lines 46-67); and wherein

the reception control unit communication area-setting means and communication control unit 11) changes the judging level into a highly sensitive judging level lower than the normal judging level in response to a first electric field intensity judgement signal corresponding to the entrance into the communication start area, and fetches the reception data in the signals received in the communication area (column 4 lines 60-67, column 5 lines 1-27, column 6 lines 48-67, column 7 lines 27-46, and column 9 lines 46-67).

Consider **claim 4**, and **as applied to claim 1 above**, Takikita also show and disclose that the reception sensitivity-increasing means (microcomputer 10A and radio detector unit 12) (figure 1) changes the judging level into a highly sensitive judging level lower than the normal judging level in response to at least a first or a subsequent communication signal received from the on-the-road equipment after the entrance into the communication start area (column 4 lines 60-67, column 5 lines 1-27, column 6 lines 48-67, column 7 lines 27-46, and column 9 lines 46-67).

Consider **claim 5**, Takikita clearly shows and discloses a DSRC car-mounted equipment for transmitting and receiving data with an on-the-road equipment (figure 1) comprising:

a reception sensitivity-increasing means (microcomputer 10A and radio detector unit 12) (figure 1) for increasing the reception sensitivity in a communication area (i.e., by contracting or reducing the communication area) with an on-the-road equipment in response to the entrance

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into a communication start area with the on-the-road equipment (i.e., as determined by the intensity of the radio electric field) (abstract, figure 3, column 4 lines 31-67, column 6 lines 26-32 and lines 53-67, column 7 lines 35-41, column 8 lines 16-50, and column 9 lines 46-67); wherein the reception sensitivity-increasing means (microcomputer 10A and radio detector unit 12) (figure 1) returns the reception sensitivity back to the normal reception sensitivity of before entering into the communication start area in response to the end of communication with the on-the-road equipment (i.e., as determined by the intensity of the radio electric field) (abstract, figure 3, column 4 lines 31-67, column 5 lines 1-27, column 6 lines 26-67, column 7 lines 35-46, column 8 line 16 - column 9 line 24, column 9 lines 46-67, and claims 1-5), wherein the DSRC car-mounted equipment further comprises a vehicle speed control unit 3 (figure 1) for producing a vehicle speed data V_r of a vehicle (column 6 lines 36-44), wherein the reception sensitivity-increasing means (microcomputer 10A and radio detector unit 12) (figure 1) includes:

a communication area-setting means (predetermined value-setting means and vehicle speed-judging means) for setting a first judging level (predetermined value) LE1 corresponding to a low-speed running state of the vehicle and a second judging level (predetermined value) LE2 corresponding to a high-speed running state of the vehicle (abstract, column 4 lines 49-59, column 6 line 48 - column 7 line 9, and column 9 lines 46-67) and for comparing the vehicle speed data V_r with the first and second predetermined values (column 9 lines 46-67); wherein

when the vehicle speed data is smaller than the first predetermined value, the normal reception sensitivity is corrected toward the decreasing side (i.e., communication area is contracted) and when the vehicle speed data is larger than the second predetermined value, the

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normal reception sensitivity is corrected toward the increasing side (i.e., communication area is expanded) (column 9 lines 46-67).

Consider **claim 9**, and **as applied to claim 1 above**, Takikita further show and disclose that the DSRC car-mounted equipment further comprises:

a microcomputer 10A (car-mounted controller) for processing data transmitted and received to and from the on-the-road equipment (figure 1, column 5 lines 28-36, column 6 lines 12-25, and claim 6); and

an external storage medium 2 connected to the microcomputer 10A (car-mounted controller) for exchanging data related to toll collection (figures 1 and 4, column 5 lines 28-36, column 6 lines 12-25, and claim 6); wherein

the microcomputer 10A (car-mounted controller) exchanges data related to the toll collection between the on-the-road equipment installed on a toll road and the external storage medium 2, and automatically executes the toll collection processing based on the data related to the toll collection (figures 1 and 4, column 5 lines 28-36, column 6 lines 12-25, and claim 6).

Allowable Subject Matter

7. **Claims 7 and 8** are allowed.

8. The following is an Examiner's statement of reasons for allowance:

Consider **claim 7**, the best prior art found during the examination of the present

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application, **Inoue (U.S. Patent # 6,300,882 B1), Inoue (U.S. Patent # 6,337,978 B1), and Takikita (U.S. Patent # 6,339,381 B1)**, either alone or in combination, fails to specifically disclose, teach, or suggest a DSRC car-mounted comprising, in combination with the other limitations recited in the claim, a transmission output-increasing means that includes a transmission amplifier, a transmission control unit for controlling the amplification factor of the transmission amplifier in response to a signal received from the on-the-road equipment, wherein the transmission control unit changes the amplification factor of the transmission amplifier to an amplification factor larger than the normal amplification factor in response to at least a second or a subsequent communication signal received from the on-the-road equipment after the entrance into the communication start area.

Consider **claim 8**, the best prior art found during the examination of the present application, **Inoue (U.S. Patent # 6,300,882 B1), Inoue (U.S. Patent # 6,337,978 B1), and Takikita (U.S. Patent # 6,339,381 B1)**, either alone or in combination, fails to specifically disclose, teach, or suggest a DSRC car-mounted comprising, in combination with the other limitations recited in the claim, a local oscillator, a transmission output-increasing means for increasing the transmission output to the on-the-road equipment in the communication area in response to the entrance into the communication start area, wherein the transmission output-increasing means returns the transmission output to the normal transmission output of before the entrance into the communication start area in response to the end of communication with the on-the-road equipment, wherein the reception sensitivity-increasing means and the transmission output-increasing means are constituted by an amplifier for amplifying a signal output from the

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local oscillator and a control unit for controlling the amplification factor of the amplifier in response to a signal received from the on-the-road equipment, and wherein the control unit changes the amplification factor of the amplifier into an amplification factor larger than the normal amplification factor in response to at least a second or a subsequent communication signal received from the on-the-road equipment after the entrance into the communication start area.

Any comments considered necessary by Applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Response to Arguments

9. Applicant's arguments with respect to **claims 1-9** have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Any response to this Office Action should be **faxed to (703) 872-9306 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

11. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Rafael Perez-Gutierrez whose telephone number is (703) 308-8996. The Examiner can normally be reached on Monday-Thursday from 6:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Marsha D. Banks-Harold can be reached on (703) 305-4379. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700 or call customer service at (703) 306-0377.


Rafael Perez-Gutierrez

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R.P.G./rpg **RAFAEL PEREZ-GUTIERREZ**
 PATENT EXAMINER

February 21, 2005